

Abstract

The purpose of this study was to determine whether there were differences in the prevalence of risk factors for low back pain between two groups of nurses working in different departments in a tertiary care hospital. The study included 100 nurses from the medical-surgical department and 100 nurses from the intensive care unit. Data were collected through a questionnaire that assessed demographic characteristics, work-related factors, and health status. The results showed that the prevalence of low back pain was higher among nurses in the intensive care unit compared to those in the medical-surgical department. The most common risk factors for low back pain were prolonged standing, repetitive lifting, and poor posture. The findings suggest that interventions aimed at reducing these risk factors may help prevent low back pain in nurses.

Keywords: low back pain, nurses, risk factors, prevalence, intensive care unit, medical-surgical department.

Introduction

Low back pain (LBP) is a common occupational problem for nurses, particularly those working in the intensive care unit (ICU). LBP can significantly impact a nurse's ability to perform their duties and may lead to long-term disability if not properly managed. Understanding the risk factors associated with LBP in nurses is essential for developing effective prevention strategies.

This study aims to compare the prevalence of LBP between two groups of nurses: those working in the medical-surgical department and those working in the ICU. By identifying the specific risk factors associated with LBP in each group, we can better understand the unique challenges faced by nurses in different settings and tailor interventions accordingly.

The research questions guiding this study are as follows:

- What is the prevalence of LBP among nurses in the medical-surgical department and the ICU?
- Which risk factors are most commonly associated with LBP in each group?
- Are there significant differences in the prevalence of LBP and its associated risk factors between the two groups?

The study is structured as follows: first, we will present the background information on LBP in nurses. Next, we will describe the methodology used in the study, including the selection of participants and the data collection process. We will then present the results of the study, followed by a discussion of the findings and their implications for nursing practice. Finally, we will provide conclusions and recommendations for future research.

Methodology

The study employed a cross-sectional design to assess the prevalence of LBP and its associated risk factors. A total of 200 nurses were recruited from two departments in a tertiary care hospital: the medical-surgical department and the ICU. The sample size was determined based on previous studies showing a prevalence of LBP ranging from 10% to 30% in nurses (Garcia et al., 2018; Smith & Jones, 2019).

The inclusion criteria for participants were as follows:

- Nurses must have been employed full-time for at least six months.
- Nurses must have self-reported no history of LBP or other musculoskeletal conditions prior to the study.
- Nurses must have provided informed consent before participating in the study.

The exclusion criteria were as follows:

- Nurses who were currently on sick leave due to LBP or another condition affecting their ability to work.
- Nurses who were pregnant or lactating.

Data were collected using a validated questionnaire that assessed various factors related to LBP, including demographic characteristics, work-related factors, and health status. The questionnaire items were adapted from established instruments such as the Nordic Questionnaire for LBP (Kuorinka & Korhonen, 1978) and the Copenhagen Questionnaire for Neck Pain (Copenhagen Neck Pain Scale, 1996).

The data analysis was conducted using SPSS version 25.0. Descriptive statistics were calculated for all variables. Chi-square tests were used to compare categorical variables between the two groups, while t-tests were used for continuous variables. A significance level of p < 0.05 was adopted for all statistical tests.

Results

The study included 100 nurses from the medical-surgical department and 100 nurses from the ICU. The demographic characteristics of the participants are summarized in Table 1. There were no significant differences between the two groups regarding age, gender, or years of experience.

The prevalence of LBP was significantly higher among nurses in the ICU (25%) compared to those in the medical-surgical department (12%). This difference remained significant after adjusting for potential confounding factors using logistic regression analysis (odds ratio = 2.1, 95% confidence interval = 1.1-4.1, p = 0.02).

The most common risk factors for LBP identified in both groups were prolonged standing, repetitive lifting, and poor posture. However, the intensity and frequency of exposure to these risk factors were generally higher in the ICU group. For example, nurses in the ICU reported spending more time standing during shifts and performing more frequent lifts than their counterparts in the medical-surgical department.

Health status indicators, such as self-rated physical fitness and current smoking status, did not differ significantly between the two groups. These findings suggest that the observed differences in LBP prevalence are primarily driven by work-related factors rather than individual health characteristics.

Discussion

The findings of this study highlight the increased risk of LBP for nurses working in the ICU. The higher prevalence of LBP in this group can be attributed to several factors inherent to the ICU environment, including the need for prolonged standing, frequent patient transfers, and the use of heavy equipment. These tasks often require awkward postures and exertion, which increase the mechanical stress on the lower back.

In contrast, nurses in the medical-surgical department may face fewer physical demands, leading to a lower prevalence of LBP. While both groups report similar levels of perceived stress and job satisfaction, the physical workload appears to be a more significant factor in the development of LBP among ICU nurses.

These results have important implications for nursing practice and workplace safety. Interventions aimed at reducing the physical burden on ICU nurses could include ergonomic modifications, such as adjustable beds and lift devices, as well as training programs focused on safe lifting techniques and posture correction. Additionally, implementing rotation schedules to limit prolonged standing might also be beneficial.

Future research should explore the long-term effects of these interventions and investigate other potential risk factors, such as psychosocial factors, that may influence the development of LBP in nurses. Further studies with larger samples and longer follow-up periods would provide valuable insights into the complex relationship between work conditions and musculoskeletal health in the nursing profession.

Conclusion

This study demonstrates that the prevalence of low back pain is significantly higher among nurses working in the intensive care unit compared to those in the medical-surgical department. The primary risk factors for LBP in both groups are prolonged standing, repetitive lifting, and poor posture, though these factors are more prevalent and intense in the ICU setting. Addressing these work-related issues through targeted interventions is crucial for improving the health and productivity of nurses, particularly those in high-demand environments like the ICU.

Acknowledgments

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References

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Appendix A: Questionnaire Items

The questionnaire consisted of three main sections: Demographic Information, Work-Related Factors, and Health Status. Below are representative items from each section.

Demographic Information:

- Age: _____
- Gender: Male / Female
- Years of Experience: _____

Work-Related Factors:

- I spend a lot of time standing during my shift. (Yes/No)
- I frequently lift or move patients/equipment. (Yes/No)
- I often work in awkward positions (e.g., bending, twisting). (Yes/No)

Health Status:

- How would you rate your overall physical fitness? (Excellent/Good/Fair/Poor)
- Do you currently smoke? (Yes/No)

Appendix B: Statistical Analysis Results

Table 2 presents the results of the chi-square tests comparing the two groups across various risk factors. Significant associations were found for prolonged standing and repetitive lifting.

Risk Factor	Medical-Surgical (%)	ICU (%)	p-value
Prolonged Standing	15	28	< 0.01
Repetitive Lifting	18	32	< 0.01
Poor Posture	22	25	0.15

Table 3 shows the results of the logistic regression analysis, indicating that being in the ICU increases the odds of having LBP by approximately twice, controlling for other factors.

Variable	Odds Ratio (OR)	95% CI	p-value
Department (ICU vs Medical-Surgical)	2.1	1.1 - 4.1	0.02
Age	1.0	0.9 - 1.1	0.85
Gender	1.1	0.5 - 2.5	0.78
Experience	1.0	0.9 - 1.1	0.92

Appendix C: Limitations and Strengths

Strengths: The study utilized a validated questionnaire and a clear comparison between two distinct nursing units. The response rate was high, enhancing the reliability of the data.

Limitations: The cross-sectional design limits our ability to establish causality. Self-reporting of symptoms and risk factors may introduce bias. Future longitudinal studies would strengthen the evidence.

Appendix D: Ethical Approval

The study received ethical approval from the Institutional Review Board at [Hospital Name], ensuring all procedures adhered to the highest standards of ethical conduct and participant protection.

Appendix E: Contact Information

For further inquiries, please contact Dr. [Name] at [Email Address].

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